

RCRA REVISION CHECKLIST 100

Liners and Leak Detection Systems for Hazardous Waste

Land Disposal Units

57 FR 3462-3497

January 29, 1992

(RCRA Cluster II, Both HWSA and Non-HWSA provisions)

Note: As is explained in the preamble (57 FR 3480 & 3481), EPA considers all of this rule to be promulgated pursuant to HSWA, with the exception of the Construction Quality Assurance Program (CQA) as it applies to final cover requirements.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART B - DEFINITIONS						
DEFINITIONS						
add "replacement unit"	260.10					
revise "sump"	260.10					
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL INSPECTION REQUIREMENTS						
replace "264.194" with "264.193, 264.195"; remove "264.253"; add "264.278	264.15(b)(4)					
CONSTRUCTION QUALITY ASSURANCE PROGRAM						
CQA program	264.19(a)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
required for all surface impoundment, wastepile and landfill units that must comply with 264.221(c)&(d), 264.251(c)&(d), and 264.301(c)&(d); program must ensure constructed unit meets or exceeds all permit design criteria and specifications; program must be developed and implemented under a CQA officer who is a registered professional engineer	264.19(a)(1)					
the physical components the CQA program must address	264.19(a)(2)					
	264.19(a)(2)(i)					
	264.19(a)(2)(ii)					
	264.19(a)(2)(iii)					
	264.19(a)(2)(iv)					
	264.19(a)(2)(v)					
	264.19(a)(2)(vi)					
before construction begins, owner/operator must develop a written CQA plan; must identify steps that will be used to monitor and document quality of materials and condition and manner of their installation; what the CQA plan must include:	264.19(b)					
identification of applicable units and how they will be constructed	264.19(b)(1)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
identification of key CQA plan development and implementation personnel; CQA officer qualifications	264.19(b)(2)					
inspection and sampling activities' description; what must be described	264.19(b)(3)					
contents of program	264.19(c)					
must include observations, inspections, tests, and measurements sufficient to ensure:	264.19(c)(1)					
structural stability and integrity of 264.19(a)(2) units	264.19(c)(1)(i)					
proper construction according to permit specifications and good engineering practices, and proper installation according to design specifications	264.19(c)(1)(ii)					
material conformity with design and other material specifications	264.19(c)(1)(iii)					
test fills for compacted soils liners, using full scale compaction methods to ensure liners are constructed to meet specific hydraulic conductivity requirements; compliance verified by in-situ testing on constructed test fill; conditions under which alternate may be accepted	264.19(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
certification to Regional Administrator before waste received; signed by CQA officer stating that approved CQA plan successfully carried out and units meet specific requirements; 270.30(I)(2)(ii) procedure complete; documentation furnished upon request	264.19(d)					

SUBPART E - MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING

OPERATING RECORD

insert "264.19, 264.191, 264.193, 246.195, 264.222, 264.223"; replace "264.253, 264.254" with "264.252 - 264.254" and "264.303" with "264.302 - 264.304"	264.73(b)(6)					
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**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
SUBPART K - SURFACE IMPOUNDMENTS						
DESIGN AND OPERATING REQUIREMENTS						
completely revise paragraph; surface impoundments which must install two or more liners and a leachate collection and removal system between such liners; "construction commences" defined under "existing facility"	264.221(c)					
liner system must include:	264.221(c)(1)(i)					
top liner designed and constructed to prevent migration of hazardous constituents into liner for specified period	264.221(c)(1)(i)(A)					
composite bottom liner consisting of at least two components; upper component to prevent migration of hazardous constituents into this component during specified period; lower component designed and constructed to minimize such migration if upper component is breached; specified thickness and hydraulic conductivity	264.221(c)(1)(i)(B)					
liners must comply with 264.221(a)(1),(2)&(3)	264.221(c)(1)(ii)					
relationship between leachate collection and removal system and a "leak detection system"; what system must be capable of; minimum requirements	264.221(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
bottom slope of 1 percent or more	264.221(c)(2)(i)					
4 constructed of: 1) granular drainage materials with 1×10^{-1} cm/sec or more hydraulic conductivity and 12 in. (30.5 cm) or more thickness, or 2) synthetic or geonet drainage materials with 3×10^{-4} m ² /sec or more transmissivity	264.221(c)(2)(ii)					
construction material specifications	264.221(c)(2)(iii)					
designed and operated to minimize clogging during active life and post-closure care period	264.221(c)(2)(iv)					
specifications for sumps and liquid removal methods	264.221(c)(2)(v)					
collect and remove pumpable liquids in sumps to minimize head on bottom liner	264.221(c)(3)					
what must be demonstrated if leak detection system is not located completely above seasonal high water table	264.221(c)(4)					
Regional Administrator may approve alternate design or operating practices if owner or operator can demonstrate that design/practices will:	264.221(d)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
prevent hazardous constituent migration into ground or surface water as effectively as system specified in 264.221(c), and	264.221(d)(1)					
allow detection of hazardous constituent leaks through top liner at least as effectively	264.221(d)(2)					
redesignate old 264.221(f) as 264.221(g); add new paragraph on exemption from 264.221(c) for replacement surface impoundment unit	264.221(f)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	264.221(f)(1)					
no reason to believe liner is not functioning as designed	264.221(f)(2)					
old 264.221(f),(g)&(h) become 264.221(g),(h)&(i)	264.221(g)-(i)					
ACTION LEAKAGE RATE						
Regional Administrator approval of action leakage rate for surface impoundment units subject to 264.221(c)or(d); definition of action leakage rate; adequate safety margin	264.222(a)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly, during active life and closure period and monthly during post-closure care period	264.222(b)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
RESPONSE ACTIONS						
approved response action plan before receipt of waste for surface impoundments subject to 264.221(c)or(d); address actions if action leakage rate exceeded; at a minimum plan must describe actions in 264.223(b)	264.223(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	264.223(b)					
notify Regional Administrator in writing within seven days of determination	264.223(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	264.223(b)(2)					
determine location, size and cause of any leak	264.223(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, or 3) unit should be closed	264.223(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	264.223(b)(5)					

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Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 264.223(b)(3)-(5) analyses, the results of actions taken, and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	264.223(b)(6)					
how the 264.223(b)(3)-(5) determinations must be made:	264.223(c)					
assess the source of liquids and amounts by source	264.223(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	264.223(c)(1)(ii)					
assess seriousness of leaks	264.223(c)(1)(iii)					
document why assessments not needed	264.223(c)(2)					
MONITORING AND INSPECTION						
if leak detection system required under 264.221(c)or(d), record amount of liquids removed from each sump, at least weekly during active life and closure period	264.226(d)(1)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
after final cover installed, at least monthly record the amount of liquids removed from each leak detection sump; when quarterly and semi-annual recording allowed; when monthly recording must resume	264.226(d)(2)					
definition of "pump operating level"	264.226(d)(3)					

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FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
CLOSURE AND POST-CLOSURE CARE						
redesignate old 264.228(b)(2) as 264.228(b)(3); add new paragraph addressing maintaining and monitoring leak detection system in accordance with 264.221(c)(2)(iv)&(3) and 264.226(d); comply with other applicable Part 264 leak detection requirements	264.228(b)(2)					
redesignated 264.228(b)(2) becomes new 264.228(b)(3)	264.228(b)(3)					
redesignated 264.228(b)(3) becomes new 264.228(b)(4)	264.228(b)(4)					
SUBPART L - WASTE PILES						
DESIGN AND OPERATING REQUIREMENTS						
redesignate old 264.251(c) as 264.251(g); add new paragraph addressing waste piles that must install two or more liners and a leachate collection and removal system above and between these liners; "construction commences" defined under "existing facility"	264.251(c)					
liner system must include:	264.251(c)(1)(i)					
top liner designed and constructed to prevent migration of hazardous constituents into liner for specified period	264.251(c)(1)(i)(A)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
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FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
composite bottom liner consisting of at least two components; upper component to prevent migration of hazardous constituents into this component during specified period; lower component designed and constructed to minimize such migration if upper component is breached; specified thickness and hydraulic conductivity	264.251(c)(1)(i)(B)					
liners must comply with 264.251(a)(1)(i)-(iii)	264.251(c)(1)(ii)					
leachate collection and removal system must collect and remove leachate from the waste pile during the active life and post-closure care period; Regional Administrator to specify permit conditions to ensure leachate depth over liner does not exceed 30 cm (1 ft); leachate collection and removal system must comply with 264.251(c)(3)(iii)&(iv)	264.251(c)(2)					
relationship between leachate collection and removal system and the leak detection system; what the leak detection system must be capable of; minimum requirements:	264.251(c)(3)					
bottom slope of 1 percent or more	264.251(c)(3)(i)					

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Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
constructed of: 1) granular drainage materials with hydraulic conductivity of 1×10^{-2} cm/sec or more, and 12 in. (30.5 cm) or more thickness; or 2) synthetic or geonet drainage materials with 3×10^{-5} m ² /sec or more transmissivity	264.251(c)(3)(ii)					
construction material specifications	264.251(c)(3)(iii)					
designed/operated to minimize clogging during active life and post-closure care period	264.251(c)(3)(iv)					
specifications for sumps and liquid removal methods	264.251(c)(3)(v)					
collect and remove pumpable liquids in leak detection system sumps to minimize head on the bottom liner	264.251(c)(4)					
what must be demonstrated if leak detection system not located completely above seasonal high water table	264.251(c)(5)					
redesignate old 264.251(d) as 264.251(h); add new paragraph addressing circumstances under which Regional Administrator may approve alternate design or operating practices if owner/operator can demonstrate that design/practices will:	264.251(d)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
prevent hazardous constituent migration into ground or surface water as effectively as system specified in 264.251(c), and	264.251(d)(1)					
allow detection of hazardous constituent leaks through top liner at least as effectively	264.251(d)(2)					
redesignate old 264.251(e) as 264.251(i); add new paragraph addressing monofills granted a 264.221(e) waiver by Regional Administrator	264.251(e)					
redesignate old 264.251(f) as 264.251(j); add new paragraph addressing when a replacement waste pile owner/operator is exempt from 264.251(c)	264.251(f)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	264.251(f)(1)					
no reason to believe liner is not functioning as designed	264.251(f)(2)					
old 264.251(c)-(g) become new 264.251(g)-(k)	264.251(f)(g)-(k)					
ACTION LEAKAGE RATE						
5 Regional Administrator approval of action leakage rate for waste pile units subject to 264.251(c) or (d); definition of action leakage rate; adequate safety margin	264.252(a)					

RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly, during active life and closure period	264.252(b)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
RESPONSE ACTIONS						
approved response action plan before receipt of waste for waste piles subject to 264.251(c) or (d); address actions if action leakage rate exceeded; plan must describe actions in 264.253(b)	264.253(a)					
responsibilities if flow rate into leak system exceeds the action leakage rate for any sump:	264.253(b)					
notify Regional Administrator in writing within seven days of determination	264.253(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	264.253(b)(2)					
determine location, size and cause of any leak	264.253(b)(3)					
determine if 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	264.253(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	264.253(b)(5)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 264.253(b)(3)-(5) analyses, the results of actions taken and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	264.253(b)(6)					
how the 264.253(b)(3), (4), & (5) determinations must be made	264.253(c)					
assess the source of liquids and amounts by source	264.253(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	264.253(c)(1)(ii)					
assess seriousness of leaks	264.253(c)(1)(iii)					
document why assessments not needed	264.253(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
MONITORING AND INSPECTION						
if leak detection system required under 264.251(c), record amount of liquids removed from each sump, at least weekly during active life and closure period	264.254(c)					
SUBPART N - LANDFILLS						
DESIGN AND OPERATING REQUIREMENTS						
completely revise paragraph; landfills that must install two or more liners and a leachate collection and removal system above and between such liners; "construction commences" defined under "existing facility"	264.301(c)					
the liner system must include:	264.301(c)(1)(i)					
top liner designed and constructed to prevent migration of hazardous constituents into liner for specified period	264.301(c)(1)(i)(A)					
composite bottom liner consisting of at least two components; upper component to prevent migration of hazardous constituents into this component during specified period; lower component designed and constructed to minimize such migration if upper component is breached; specified thickness and hydraulic conductivity	264.301(c)(1)(i)(B)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
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FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
liners must comply with 264.301(a)(1)(i)-(iii)	264.301(c)(1)(ii)					
6 leachate collection and removal system must collect and remove leachate from the landfill during the active life and post-closure care period; Regional Administrator to specify permit conditions to ensure leachate depth over liner does not exceed 30 cm (1 ft); leachate collection and removal system must comply with 264.301(c)(3)(iii)&(iv)	264.301(c)(2)					
relationship between leachate collection and removal system and the leak detection system; what the leak detection system must be capable of; minimum requirements:	264.301(c)(3)					
bottom slope of 1 percent or more	264.301(c)(3)(i)					
constructed of: 1) granular drainage materials with hydraulic conductivity of 1×10^{-2} cm/sec or more, and 12 in. (30.5 cm) or more thickness; or 2) synthetic or geonet drainage materials with 3×10^{-5} m ² /sec or more transmissivity	264.301(c)(3)(ii)					
construction material specifications	264.301(c)(3)(iii)					
designed/operated to minimize clogging during active life and post-closure care period	264.301(c)(3)(iv)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
specifications for sumps and liquid removal methods	264.301(c)(3)(v)					
collect and remove pumpable liquids in leak detection system sumps to minimize head on the bottom liner	264.301(c)(4)					
what must be demonstrated if leak detection system not located completely above seasonal high water table	264.301(c)(5)					
completely revise paragraph; Regional Administrator may approve alternate design or operating practices if owner/operator can demonstrate that design/practices will:	264.301(d)					
prevent hazardous constituent migration into ground or surface water as effectively as system specified in 264.301(c), and	264.301(d)(1)					
allow detection of hazardous constituent leaks through top liner at least as effectively	264.301(d)(2)					
redesignate old paragraph 264.301(f) as 264.301(g); add new paragraph addressing when a replacement landfill owner/operator is exempt from 264.301(c)	264.301(f)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	264.301(f)(1)					

RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
no reason to believe liner is not functioning as designed	264.301(f)(2)					
old 264.301(f)-(k) become new 264.301(g)-(l)	264.301(g)-(l)					

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FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
ACTION LEAKAGE RATE						
Regional Administrator approval of action leakage rate for landfill units subject to 264.301(c) or (d); definition of action leakage rate; adequate safety margin	264.302(a)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly, during active and closure period	264.302(b)					
MONITORING AND INSPECTION						
if leak detection system required 264.301(c) or (d), record amount of liquids removed from each sump at least weekly during the active life and closure period	264.303(c)(1)					
after final cover installed, at least monthly record the amount of liquids removed from each leak detection sump; when quarterly and semi-annual recording allowed; when monthly recording must resume	264.303(c)(2)					
definition of "pump operating level"	264.303(c)(3)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
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FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
RESPONSE ACTIONS						
approved response action plan before receipt of waste for landfills subject to 264.301(c) or (d); address actions if action leakage rate exceeded; at a minimum, plan must describe actions in 264.304(b)	264.304(a)					
responsibilities if flow rate into leak detection system exceeds the section leakage rate for any sump	264.304(b)					
notify Regional Administrator in writing within seven days of determination	264.304(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	264.304(b)(2)					
determine location, size and cause of any leak	264.304(b)(3)					
determine if 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	264.304(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	264.304(b)(5)					

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FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 264.304(b)(3)-(5) analyses, the results of actions taken and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	264.304(b)(6)					
how the 264.304(b)(3)-(5) determinations must be made	264.304(c)					
assess the source of liquids and amounts by source	264.304(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	264.304(c)(1)(ii)					
assess seriousness of leaks	264.304(c)(1)(iii)					
document why assessments not needed	264.304(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
CLOSURE AND POST-CLOSURE CARE						
redesignate old 264.310(b)(3) as 264.310(b)(4); add new paragraph addressing maintaining and monitoring leak detection system according to 264.301(c)(3)(iv)&(4) and 264.303(c); comply with other applicable Part 264 leak detection requirements	264.310(b)(3)					
old 264.310(b)(3)-(5) become 264.310(b)(4)-(6)	264.310(b)(4)-(6)					
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL INSPECTION REQUIREMENTS						
insert "265.260, 265.278, 265.304"	265.15(b)(4)					
CONSTRUCTION QUALITY ASSURANCE PROGRAM						
CQA program	265.19(a)					
required for all surface impoundment, waste pile and landfill units that must comply with 265.221(a), 265.254 and 265.301(a); program must ensure constructed unit meets or exceeds all permit design criteria and specifications; program must be developed and implemented under a CQA officer who is a registered professional engineer	265.19(a)(1)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
the physical components the CQA program must address	265.19(a)(2)					
	265.19(a)(2)(i)					
	265.19(a)(2)(ii)					
	265.19(a)(2)(iii)					
	265.19(a)(2)(iv)					
	265.19(a)(2)(v)					
	265.19(a)(2)(vi)					
before construction begins, owner/operator must develop a written CQA plan; identify steps that will be used to monitor and document the quality of materials and condition and manner of their installation; the CQA plan must include:	265.19(b)					
identification of applicable units and how they will be constructed	265.19(b)(1)					
identification of key CQA plan development and implementation personnel; CQA officer qualifications	265.19(b)(2)					
inspection and sampling activities' description; what must be described	265.19(b)(3)					
contents of program	265.19(c)					
must include observations, inspections, tests, and measurements sufficient to ensure:	265.19(c)(1)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
structural stability and integrity of 265.19(a)(2) units	265.19(c)(1)(i)					
proper construction according to permit specifications and good engineering practices, and proper installation according to design specifications	265.19(c)(1)(ii)					
material conformity with design and other material specifications under 264.221, 264.251, and 264.301	265.19(c)(1)(iii)					
test fills for compacted soils liners, using full scale compaction methods to ensure liners are constructed to meet specific hydraulic conductivity requirements; compliance verified by in-situ testing on constructed test fill; conditions under which test fill requirement may be waived	265.19(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
certification to Regional Administrator at least 30 days before receiving waste; signed by CQA officer stating that CQA plan has been successfully carried out and that the unit meets specific requirements; may receive wastes in unit after 30 days from the Regional Administrator's receipt of the CQA, unless Regional Administrator determines in writing that construction is not acceptable or extends review period for 30 days or seeks additional information; CQA documentation	265.19(d)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE

SUBPART E - MANIFEST SYSTEM, RECORDKEEPING AND REPORTING

OPERATING RECORD

replace "when required by" with ", and corrective action where required by subpart F and"; insert "265.19" before "265.90"; insert "265.222, 265.223, 265.226, 265.255, 265.259, 265.260" after "265.195" and "265.302 - 265.304" after "265.280(d)(1)"	265.73(b)(6)					
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SUBPART K - SURFACE IMPOUNDMENTS

DESIGN AND OPERATING REQUIREMENTS

completely revise paragraph; surface impoundment units that must install two or more liners and a leachate collection and removal system between such liners and operate leachate collection and removal systems in accordance with 264.221(c), "construction commences" defined under "existing facility"	265.221(a)					
revise paragraph; when a replacement surface impoundment unit is exempt from 265.221(a):	265.221(c)					
constructed in compliance with RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	265.221(c)(1)					
no reason to believe liner is not functioning as designed	265.221(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
redesignate old paragraph 265.222(a) as 265.221(f)	265.221(f)					
redesignate old paragraph 265.222(b) as 265.221(g)	265.221(g)					

ACTION LEAKAGE RATE

redesignate old 265.222(a) as 265.221(f); add new paragraph addressing proposed action leakage rate to Regional Administrator when submitting 265.221(b) notice; within 60 days of receipt, Regional Administrator will establish action leakage rate or extend review period; when the proposed rate will be approved	265.222(a)					
redesignate old 265.222(b) as 265.221(g); add new paragraph addressing Regional Administrator approval of action leakage rate for 265.221(a) units; definition of action leakage rate; adequate safety margin	265.222(b)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly during active life and closure period, and monthly during post-closure care period	265.222(c)					

RESPONSE ACTIONS

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
if unit subject to 265.221(a), then must submit a response action plan to the Regional Administrator when submitting 265.222 proposed action leakage rate; must set forth actions to be taken if action leakage rate is exceeded; content as specified in 265.223(b)	265.223(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	265.223(b)					
notify Regional Administrator in writing within seven days of determination	265.223(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	265.223(b)(2)					
determine location, size and cause of any leak	265.223(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	265.223(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	265.223(b)(5)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 265.223(b)(3)-(5) analyses, the results of actions taken, and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	265.223(b)(6)					
how the 265.223(b)(3), (4) & (5) determinations must be made	265.223(c)					
assess the source of liquids and amounts by source	265.223(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	265.223(c)(1)(ii)					
assess seriousness of leaks	265.223(c)(1)(iii)					
document why assessments not needed	265.223(c)(2)					
MONITORING AND INSPECTION						
if leak detection system required under 265.221(a), record amount of liquid removed from each sump, at least weekly during active life and closure period	265.226(b)(1)					

RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
after final cover installed, record amount of liquids at least monthly; when quarterly and semi-annual recording allowed; when monthly recording must resume	265.226(b)(2)					
"pump operating level" defined	265.226(b)(3)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
CLOSURE AND POST-CLOSURE CARE						
redesignate old 265.228(b)(2) as 265.228(b)(3); add new paragraph regarding maintaining and monitoring the leak detection system in accordance with 265.221(c)(2)(iv) and (3) and 265.226(b) and comply with other applicable Part 265 leak detection system requirements	265.228(b)(2)					
redesignated 265.228(b)(2) becomes new 265.228(b)(3)	265.228(b)(3)					
redesignated 265.228(b)(3) becomes new 265.228(b)(4)	265.228(b)(4)					
SUBPART L - WASTE PILES						
DESIGN AND OPERATING REQUIREMENTS						
completely revise section; waste piles which must install two or more liners and a leachate collection and removal system in accordance with 264.251(c) unless exempt under 264.251(d), (e) or (f); compliance with 265.221(b) procedures; "construction commences" defined under "existing facility"	265.254					
ACTION LEAKAGE RATES						

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
proposed action leakage rate to Regional Administrator when submitting 265.254 notice; within 60 days of receipt, Regional Administrator will establish action leakage rate or extend review period; when the proposed rate will be approved	265.255(a)					
8 Regional Administrator approval of action leakage rate for 265.254 units; definition of action leakage rate; adequate safety margin	265.255(b)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly during active life and closure period	265.255(c)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
RESPONSE ACTIONS						
if unit subject to 265.254, then must submit a response action plan to the Regional Administrator when submitting 265.255 proposed action leakage rate; must set forth actions to be taken if action leakage rate is exceeded; content as specified in 265.259(b)	265.259.(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	265.259(b)					
notify Regional Administrator in writing within seven days of determination	265.259(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	265.259(b)(2)					
determine location, size and cause of any leak	265.259(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	265.259(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	265.259(b)(5)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 265.259(b)(3)-(5) analyses, the results of actions taken and actions planned thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	265.259(b)(6)					
how the 265.259(b)(3),(4) & (5) determinations must be made:	265.259(c)					
assess the source of liquids and amounts by source	265.259(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	265.259(c)(1)(ii)					
assess seriousness of leaks	265.259(c)(1)(iii)					
document why assessments not needed	265.259(c)(2)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE

MONITORING AND INSPECTION

if leak detection system required under 265.254, record amount of liquids removed from each sump, at least weekly during active life and closure period	265.269					
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SUBPART N -- LANDFILLS

DESIGN AND OPERATING REQUIREMENTS

completely revise paragraph; landfills which must install two or more liners and a leachate collection and removal system above and between such liners, and operate in accordance with 264.301(d), (e) or (f); "construction commences" defined under "existing facility"	265.301(a)					
revise paragraph; when a landfill owner/operator is exempt from 265.301(a)	265.301(c)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	265.301(c)(1)					
no reason to believe liner is not functioning as designed	265.301(c)(2)					
redesignated 265.302(a), (b), (c) & (d) became new 265.301(f), (g), (h) and (i)	265.301(f)-(i)					

ACTION LEAKAGE RATE

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
redesignate old 265.302(a) as 265.301(f); add new paragraph addressing proposed action leakage rate to Regional Administrator when submitting 265.301(b) notice; within 60 days of receipt Regional Administrator will establish action leakage rate or extend the review period; when the proposed rate will be approved	265.302(a)					
redesignate old 265.302(b) as 254.301(g); add new paragraph addressing Regional Administrator approval of action leakage rate for 265.301(a) units; definition of action leakage rates; adequate safety margin	265.302(b)					
redesignate old 265.302(c) as 265.301(h); add new paragraph addressing how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly during active life and closure period, and monthly during post-closure care period	265.302(c)					
old 265.302(d) becomes 265.301(i)	265.302(d)					

RESPONSE ACTIONS

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
if unit subject to 265.301(a), then must submit a response action plan to the Regional Administrator when submitting 265.302 proposed action leakage rate; must set forth actions to be taken if action leakage rate is exceeded; content as specified in 265.303(b)	265.303(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	265.303(b)					
notify Regional Administrator in writing within seven days of determination	265.303(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	265.303(b)(2)					
determine location, size and cause of any leak	265.303(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	265.303(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	265.303(b)(5)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 265.303(b)(3)-(5) analyses, the results of actions taken and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	265.303(b)(6)					
how the 265.303(b)(3), (4) & (5) determinations must be made:	265.303(c)					
assess the source of liquids and amounts by source	265.303(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	265.303(c)(1)(ii)					
assess seriousness of leaks	265.303(c)(1)(iii)					
document why assessments not needed	265.303(c)(2)					
MONITORING AND INSPECTION						
if leak detection system required under 265.301(a), record amount of liquids removed from each sump, at least weekly during active life and closure period	265.304(a)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
after final cover installed, record amount of liquid at least monthly; when quarterly and semiannual recording allowed; when monthly recording must resume	265.304(b)					
definition of "pump operating level"	265.304(c)					

CLOSURE AND POST-CLOSURE CARE

redesignate old 265.310(b)(2) as 265.310(b)(3); add new paragraph addressing maintaining and monitoring the leak detection system in accordance with 264.301(c)(3)(iv) & (4), and 265.304(b); comply with other applicable Part 265 leak detection system requirements	265.310(b)(2)					
redesignated 265.310(b)(2), (3) & (4) become 265.310(b)(3), (4) & (5)	265.310(b)(3)-(5)					

**PART 270 - EPA ADMINISTERED PERMIT PROGRAMS:
THE HAZARDOUS WASTE PERMIT PROGRAM**

SUBPART A - GENERAL INFORMATION

EFFECT OF A PERMIT

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
paragraph is reorganized so that requirements not included in a permit are subparagraphs (a)(1)&(2); add a third subparagraph addressing Part 264 requirements regarding leak detection systems for new and replacement surface impoundments, waste piles, landfills and lateral expansion of such units; what the leak detection system requirements include	270.4(a)					
	270.4(a)(1)					
	270.4(a)(2)					
	270.4(a)(3)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
SUBPART B - PERMIT APPLICATION						
SPECIFIC PART B INFORMATION REQUIREMENTS FOR SURFACE IMPOUNDMENTS						
remove "or will be" after "impoundment is" and insert "and is or will be" after "designed"; insert "264.19," "264.222," and "264.223 of this chapter"; replace the last sentence with the following clause: ", addressing the following items:"	270.17(b)					
redesignate old 270.17(b)(2) as 270.17(b)(6); add new paragraph addressing double liner and leak (leachate) detection, collection and removal system if unit must meet 264.221(c) requirements; submission if seeking 264.221(d), (e) or (f) exemption	270.17(b)(2)					
redesignate old 270.17(b)(3) as 270.17(b)(7); add new paragraph addressing information required if surface impoundment is located in a saturated zone	270.17(b)(3)					
construction quality assurance plan, if required	270.17(b)(4)					
proposed action leakage rate with rationale and response action plan if required	270.17(b)(5)					
redesignated 270.17(b)(2)&(3) became new 270.17(b)(6)&(7)	270.17(b)(6)&(7)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
replace "liner and" with "double liner system, leak detection system"; replace "§ 264.226(a) and (b)" with "§ 264.226(a), (b) and (d) of this chapter"	270.17(c)					
SPECIFIC PART B INFORMATION REQUIREMENTS FOR WASTE PILES						
insert "waste" before "pile"; remove "or will be" after pile is"; insert "and is or will be" after "designed"; insert "264.19" "264.252" and "264.253 of this chapter"; replace last sentence with following clause: "addressing the following items:"	270.18(c)					
redesignate old 270.18(c)(1) as 270.18(c)(1)(i); after parenthetical clause addressing existing portion, insert "if the waste pile must meet the requirements of § 264.251(a) of this chapter"; replace "§ 264.252(b), the owner or operator must submit" with "§ 264.251(b) of this chapter, submit"	270.18(c)(1)(i)					
double liner and leak (leachate) detection, collection, and removal system if must meet 264.251(c) requirements; submission if seeking a 264.251(d), (e) or (f) exemption	270.18(c)(1)(ii)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
information required if leak detection system is located in a saturated zone	270.18(c)(1)(iii)					
construction quality assurance plan if required	270.18(c)(1)(iv)					
proposed action leakage rate with rationale and response action plan if required	270.18(c)(1)(v)					
replace "liner" with "double liner system, leachate collection and removal system, leak detection system, cover system"; replace "264.254(a) and (b)" with "264.254(a), (b) and (c) of this chapter"	270.18(d)					

SPECIFIC PART B INFORMATION REQUIREMENTS FOR LANDFILLS

remove "or will be" after "landfill is" and insert "and is or will be" after "designed"; insert "264.19" and "264.302 and 264.303 of this chapter"; replace the last sentence with the following clause: ", addressing the following items:"	270.21(b)					
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**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
redesignate old 270.21(b)(1) as 270.21(b)(1)(i); remove "and leachate collection and removal system"; add "if the landfill must meet the requirements of §264.301(a) of this chapter" to first sentence; add "of this chapter" after "264.301(b)"; after "alternate" change "design" to "designs"; after "any hazardous" change "constituent" to "constituents"	270.21(b)(1)(i)					
double liner and leak (leachate) detection, collection, and removal system if must meet 264.301(c) requirements; submission if seeking exemption under 264.301(d), (e) or (f)	270.21(b)(1)(ii)					
information required if leak detection system located in a saturation zone	270.21(b)(1)(iii)					
construction quality assurance plan if required	270.21(b)(1)(iv)					
proposed action leakage rate, with rationale and response action plan if required	270.21(b)(1)(v)					

**RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)**

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE
9 remove "liner and" and insert "double liner system, leachate collection and removal system,"; after "cover system" insert "and appurtenances for control or run-on and run-off,"; replace "264.303(a) and (b)" with "264.303(a), (b), and (c) of this chapter"; in last sentence, replace "should" with "must"	270.21(d)					

RCRA REVISION CHECKLIST 100: Liners and Leak Detection Systems for
Hazardous Waste Land Disposal Units(cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV- ALENT	LESS STRIN- GENT	MORE STRIN- GENT	BROADER IN SCOPE

SUBPART D - CHANGES TO PERMIT

PERMIT MODIFICATION AT THE REQUEST OF THE PERMITTEE

add the "7. a. & b." entries under "B. General Facility Standards"; add the "6., and 7. a., b. & c." entries under "H. Surface Impoundments"; add the entries "7., and 8. a., b. & c." entries under "J. Landfills and Unenclosed Waste 270.42/Piles"	270.42/Appendix I					
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- 1 This section is considered to be both a HSWA and a Non-HSWA provision. It is Non-HSWA only to the extent that it applies to the final cover requirements for the Construction Quality Assurance Program.
- 2 Note that there is a typographical error in the Federal Register; "COA" should be "CQA."
- 3 Note that there is a technical error in the Federal Register; "1x10⁻⁷/cm/sec" should be "1x10⁻⁷cm/sec."
- 4 Note that there are two technical errors in the Federal Register; "1x10⁻¹/cm/sec" should be "1x10⁻¹cm/sec" and 3x10⁻⁴/m²sec" should be 3x10⁻⁴m²/sec."
- 5 Note that there is a typographical error in the Federal Register; "surface impoundment" should be "waste pile."
- 6 Note that there is a technical error in the Federal Register; "paragraphs (3)(c)(iii) and (iv)" should be "paragraphs (c)(3)(iii) and (iv)."
- 7 Note that there is a typographical error in the Federal Register; "surface impoundment" should be "landfill."
- 8 Note that there is a typographical error in the Federal Register; "surface impoundment" should be "waste pile."
- 9 Note that in the Federal Register this section is incorrectly designated as 270.21(c).